REMARKS

These remarks follow the order of the paragraphs of the office action. Relevant portions of the office communication are shown indented and italicized.

> *Claim 1 is rejected under* 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
>
> *Claim 1 is now 2 sentences long, a period falling at end of line 1 on page 3 of the amendment. A claim can only be 1 sentence long*

In response, the applicant respectfully states that claim 1 is amended to be one sentence. This overcomes the rejection of claim 1 under 35 U.S.C. 112, second paragraph. Claim 1 is definite and particularly points out and distinctly claim the subject matter which applicant regards as the invention.

> *The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:*
>
> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.*
> *Patentability shall not be negatived by the manner in which the invention was made.*
>
> *Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willars et al in view of Carlsson and Engelhart and Miernik et al.*

In response, the applicant respectfully states that Claims 1 as being unpatentable by the invention of Willars and Carlsson and Engelhart and Miernik. The present invention, claimed in Claims 1, provides access to wireless communication

> "wherein a network control unit identifies availability of different communication networks for a communication device. The communication device is notified of a recommendation of identified communication networks. In response to this notification,

the communication device initiates access to the recommended communication network for establishing a communication channel."

Thus the invention in claim 1 is directed to methods for managing network resources for wireless communication, automatically executed by an network control unit. The network control unit being external to the communication device. It enables a communication device to "vertically handover" a communication channel, so that devices can switch communications from one type of network to another or can establish communication on a recommended network.

Whereas, the cited art to Willars, US Patent 7,072,656, filed: February 8, 2002, is entitled: "Handover in a shared radio access network environment using subscriber-dependent neighbor cell lists". The Willars abstract reads:

> "In a radio access network (14) comprising a serving radio network control node (26.sub.1) and a drift radio network control node (26.sub.2), a determination is first made that a target cell controlled by the drift radio network control node should be prepared for handover with respect to a user equipment unit (30). The target cell is neighbored by a set of neighboring cells, the set of neighboring cells including a first subset of neighboring cells and a second subset of neighboring cells, a handover involving the user equipment unit being permitted for a cell of the first subset but not for a cell of the second subset. In accordance with the determination, a message including a filtered list of cells is sent to the user equipment unit, the filtered list of cells including the first subset but not the second subset. The filtered list of cells can comprise, for example, a list of cells for whose frequencies the user equipment unit is to perform measurements. Which nodes perform the actions of (1) determining an allowed area(s) for the user equipment unit; and (2) preparing the filtered list of cells using the allowed area(s) depends on which of various alternative implementations are utilized ".

Thus, Willars is directed to handover in a shared radio access network environment using subscriber-dependent neighbor cell lists. Willars is apparently not concerned with an external network control unit managing network resources for wireless communication, automatically executed by the network control unit. Willars is concerned with handover neighbor cell lists. Willars is not concerned with network resource management or provision of network specific

requirements. Willars is not concerned with enabling a communication device to "vertically handover" a communication channel, so that devices can switch communications from one type of network to another or can establish communication on a recommended network

The further cited art to Carlsson, US Patent 2003/0119524, filed: December 22, 2001, is entitled: "Locating packet-switched mobile terminals using network initiated artificial cell hops". The Carlsson abstract reads:

> "Determining the position of a mobile terminal operating in a packet-switched communications system based on timing advance values obtained through network initiated artificial cell hops. The mobile terminal may be instructed to perform a series of artificial cell changes so that timing advance values may be obtained for the mobile terminal with respect to a plurality of base stations. The position of the mobile terminal is then determined based on the timing advance values, optionally supplemented by signal strength measurements. The mobile terminal may contact a network entity via the base station in each cell before being instructed to change to the next base station. Or, the mobile terminal may be supplied with a list of base stations to contact, with the mobile terminal transmitting short access bursts to the base station in a given cell before automatically tuning to the next cell, without waiting for an acknowledgment. ".

Thus Carlsson is directed to position determination of a mobile terminal operating in a packet-switched communications system based on timing advance values obtained through network initiated artificial cell hops. Carlsson is also not concerned with an external network control unit managing network resources for wireless communication, automatically executed by the network control unit, and doesn't support Willars in this deficiency.

The still further cited art to Engelhart, US Patent 2004/0203580, filed: September 25, 2002, is entitled: "Virtual subscriber network". The Engelhart abstract reads:

> "A user device (e.g., a mobile telephone) communicates with an access node in a manner that causes the access node to provide call control and service options available through the access node. The capability and cost information is presented to a user device

subscriber. The user device communicates to the access node a selection of call control and service options to use with the device".

Thus, Engelhart is directed to a virtual subscriber network in which a user device communicates with an access node in a manner that causes the access node to provide call control and service options available through the access node. Engelhart is also not concerned with an external network control unit managing network resources for wireless communication, automatically executed by the network control unit, and doesn't support Willars in this deficiency.

The still further cited art to Miernik, US Patent 7177641, filed: January 11, 2002, is entitled: "System and method for identifying a wireless serving node for a mobile unit". The Miernik abstract reads:

"A system and method for identifying a wireless serving node for a mobile unit include the ability to receive a wireless registration request at a control node for a wireless serving node cluster and determine a control node associated with the registration request by using an algorithm on a mobile unit identifier in the registration request. The system and method also include the ability to generate a wireless registration response containing an identifier for the control node associated with the registration request if the control node is not the control node associated with the registration request".

Thus, Miernik is directed to identifying a wireless serving node for a mobile unit include the ability to receive a wireless registration request at a control node for a wireless serving node cluster and determine a control node associated with the registration request by using an algorithm on a mobile unit identifier in the registration request. Miernik is also not concerned with an external network control unit managing network resources for wireless communication, automatically executed by the network control unit, and doesn't support Willars in this deficiency.

Thus, the combination fails to teach the elements of claim 1, or make claim 1 obvious, and claim 1 is allowable over the combined art.

Furthermore, there is apparently no reason to make the four way combination except in apparently using hindsight and attempting to find a combination that has all the elements of claim 1. Use of hindsight is not permitted. One skilled in the art would not have an inkling of making the combination of the four disparate references. Apparently the reference fail to refer to one another, as required in a 103 obviousness rejection. Besides even the combination fails to teach all the elements of claim 1, or make claim 1 obvious.

Claim 1 reads:

> 1. A method for managing network resources for wireless communication, comprising steps being automatically executed by a network control unit, said steps comprising:
>
> identifying availability of different communication networks for a communication device,
>
> notifying the communication device of a recommendation of identified communication networks which recommendation is binding for the communication device to connect to such recommended network,
>
> determining a at least rough location of the communication device, and
>
> identifying communication networks covering the device's location;
>
> identifying communication networks covering the device's location according to a look-up table;
>
> identifying access capability of the communication device to other communication networks;
>
> identifying communication networks covering the device's location and being accessible for the communication device; and wherein:

communication networks are recommended according to communication costs;

communication networks are recommended according to a current load;

communication networks are recommended according to bandwidth properties;

communication networks are recommended according to a customer profile;

a hand over process for establishing a communication channel on a recommended communication network is started after the communication device is notified;

the identification of available networks is triggered by a network control unit;

the identification of available networks is triggered periodically;

the identification of available networks is triggered when a physical movement of the communication device is detected; and

the identification of available networks is triggered by a capacity shortage on at least one of the networks.

These steps are not taught or alluded to by Willars with or without Carlsson, Engelhart and Miernik.

The office communication continues:

Willars et al disclose in col. 5, lines 17 et seq., a technique to provide a mobile phone a list of neighboring cells that are adapted to that specific mobile's subscription.

Willars et al disclose in col. 5, lines 17-52 reads:

"What is needed, therefore, and an object of the present invention, is a technique to provide the mobile a list of neighbor cells adapted to that specific mobile's subscription.

BRIEF SUMMARY

In a radio access network comprising a serving radio network control node and a drift radio network control node, a determination is first made that a target cell controlled by the drift radio network control node should be prepared for handover with respect to a user equipment unit. The target cell is neighbored by a set of neighboring cells, the set of neighboring cells including a first subset of neighboring cells and a second subset of neighboring cells, with the user equipment unit being permitted access to radio resources or to handover to cells in the first subset but not cells in the second subset. In accordance with the determination, a message including a filtered list of cells is sent to the user equipment unit, the filtered list of cells including the first subset but not the second subset. The filtered list of cells can comprise, for example, a list of cells for whose frequencies the user equipment unit is to perform measurements. Which nodes perform the actions of (1) determining an allowed area(s) for the user equipment unit; and (2) preparing the filtered list of cells using the allowed area(s) depends on which of various alternative implementations are utilized.

In accordance with a first alternative, the drift radio network control node both determines the allowed area(s) for the user equipment unit and performs the filtering. In particular, the serving radio network control node transmits to the drift radio network control node an identification of the target cell and an identification of the user equipment unit. The drift radio network control node determines the allowed area(s) and performs the filtering, after which the drift radio network control node transmits to the serving radio network control node the filtered list."

This apparently includes all of Willars cited against claim 1. A review shows indeed that it fails to allude to the elements of claim 1. It provides Willars' embodiment for "a technique to provide the mobile a list of neighbor cells adapted to that specific mobile's subscription." Claim 1 is not

concerned with neighbor cells, a list of neighbor cells, or any thing adapted to that specific mobile's subscription. This has little if any, relevance to "managing network resources for wireless communication, comprising steps being automatically executed by a network control unit, as in claim 1. Willars is directed to neighbor cells and has no other interest of managing network resources.

Claim 1 is directed managing network resources, concerned with determining a network has the required resources in terms of processing capability, or network bandwidth, or similar, to establish such link. It is not concerned with 'neighboring cells' for 'handover', as id Willars.

Page 4 of the present specification upon which claim 1 is based, reads:

> In order to give the communication device advice which network to access, the network control unit is identifying availability of different communication networks for the communication device as a particular network has to be at least available in a sense of generally providing services in the device's location. This may preferably refer to the fact that coverage is physically provided by a particular network at the user's location, and / or preferably refer to the fact that the particular network may establish a communications link to the user, i.e. the network has the required resources in terms of processing capability, or network bandwidth, or similar, to establish such link. The results of the identification process are transmitted to the communication device. But not necessarily all results are subject to a message to the communication device. The network control unit might take a selection from the identified available networks and may notify the communication device only on one or more selected ones - these are recommended ones - out of the identified available networks. There might be different criteria applied to derive the recommended networks from the identified networks. There might be a number n of recommended networks with $0 <= n <= m$, and m being the amount of identified available networks. A recommendation of a network can basically be interpreted as binding for the communication device to connect to, or can be interpreted as suggestion to do so.

The office communication continues:

> *In line 23 of col. 5 Willars et al disclose that a determination is first made that a target cell controlled by the drift node's controller should be prepared for a handover. The target cell is neighbored by other cells, with the mobile station being permitted to access radio resources or to handover to cells in one subset of cells but not permitted to handoff to other cells. A filtered list of cells is sent to the user equipment (UE) which only includes the cells which the radio network's controller will allow the UE to access. In lines 43 et seq., Willars et al disclose that the radio network's control node determines the allowed areas for the UE and also filters out the non-allowed cell areas, presumably those cell areas that would not support the UE's subscription requests. In col. 4, lines 28 et seq.,*

In response, the applicants respectfully states that indeed Willars'

The present specification end of page 4 over to page 5 reads:

> Basically, the invention enables a communication device to "vertically handover" a communication channel, that is to say that devices can switch communications from one type of network to another or can establish communication on a recommended network, for example in order to increase communications bandwidth, to lower cost, or to optimize bandwidth utilization from the network operator's point of view. Basically, the network control unit is controlling this process, at least initiating. A network operator is provided with adequate means - that is basically the network control unit - to assign communication devices to the "right" network when more than one is available.
>
> As now the communication device is guided by the network to perform a vertical hand-over, a need for active scanning by the device is eliminated, thereby saving communication bandwidth and reducing power consumption of the communication device. Furthermore, globalized optimization of network resources over all devices present within the diverse networks administered and operated through one single operator become possible. Device initiated hand-up respectively hand-down can remain a fall-back solution.

Vertical handover [or handoff] is used when a computing environment is based on seamless connectivity, intelligent network management among heterogeneous network interfaces. Willars has no concern for any vertical handover.

Willars et al disclose that the radio network controller stores cell info for all cells it controls and all neighboring cells. The RNC's UTRAN will transmit to the mobile subscriber a list of channels for which the mobile is to measure the signal strength. The mobile station measures the signal strengths of transmissions received from each of the neighboring cells and reports the strongest ones, which become candidates for handover. Willars et al disclose a look-up table @ col. 6, lines 5-12, and in col. 5, lines 25-35 the controller determines which subset of cells to permit the mobile user to transition into.

Willars et al never specifically mention that the position of the E is ever made.

However, Carlsson discloses in the Abstract that the position/location of the UE is to be determined based on timing advanced values. In P.0020 Carlsson discloses that if the timing advance values are available, the location of the mobile station 80 may be determined without the need for GPS. Therefore, Carlsson has readily admitted that GPS may also be used to determine a UE's position. To have provided Carlsson's teaching of determining a mobile station's location in Willars et al radio network would have been obvious to a person having ordinary skill in the art because both references are teaching 3rd generation services (3GPP) to a mobile user as the user is moving, or roaming, from one cell area to another. In P.0003 Carlsson discloses that a mobile terminal will contact a network via the base station in each cell before being instructed by the communications system to retune to the next base station. The only reason a mobile station would retune to another base station is if the signal is getting weak, and the only reason that a signal would be getting weak is if the UE is moving farther away from the BS's transceiver, i.e., roaming, and thus necessitating a handover to another cell site and Base Station. Therefore, with both Willars et al and Carlsson teaching handovers from one mobile cell site to another, the skilled practitioner in the wireless arts would have found these references combinable. Common sense would dictate this substitution.

Willars et al also never discloses communicating the cost of services from a service/control node to a mobile user. However, Englehart does disclose in P.0006 that a subscriber can access services which are limited by the service plan to which the user subscribes. In P.0027 & P.0028 Engelhart discloses that a service node 114 communicates to the mobile user 122 the capabilities and costs of the service node 114. To have provided Engelhart's disclosure of a node communicating the cost of using the services of that particular provider in Willars et al communication system would have been obvious to a person having ordinary skill in these wireless arts because both references are teaching providing services to a roaming subscriber. Engelhart specifically mentions "roaming" twice in P.0006.

Willars et al never specifically disclose a control node's processor measuring the current load or bandwidth of a particular sector before allowing a handoff. Miernik et al disclose a roaming mobile phone user. Col. 1, lines 27-42, and soft handoff of that mobile phone in col. 6, line 29. In col. 12, lines 30-44, Miernik et al disclose that a database 95 contains data regarding service nodes 61. Miernik goes on to disclose that when

processor 92 attempts to select one of the serving nodes, the processor attempts to balance the load between the nodes 61 based on their respective capacities and/or current load. The current load on a serving node may depend on CPU usage, memory usage, occupancy, bandwidth usage, or any other appropriate factor. To have provided Miernik's teaching of the control node's processor measuring the current load/bandwidth of a particular sector before allowing a handover into Willars et al would have been obvious to a person having ordinary skill in the art because if one wireless sector is filled to capacity with users requesting services it would be futile to cram other users into that sector because the QoS would be far less than if the user was placed in a secot where the load was less. Additionally, Miernik et al disclose roaming subscribers in col. 1, lines 27-29. Therefore, since all 4 references teach roaming mobile units, a skilled practitioner in these arts would have found these references combinable.

In response, the applicants respectfully states that indeed the office communication in some ways provides a synopsis of the references, without spelling out what element of claim 1, the portion of the reference teaches. This is apparently because there is no teaching of all the elements of claim 1.

The combined references fail to show concern or teach or make obvious:

any method for managing network resources;

any network control unit;

any execution by a network control unit;

any identifying availability of different communication networks for a communication device;

any notification of a communication device of a recommendation of identified communication networks;

any recommendation that is binding;

any informing a communication device to connect to a recommended network;

any rough location of a communication device, or

any identifying of communication networks covering a device's location;

any network lookup table;

any identifying communication networks covering the device's location according to a look-up table;

any access capability of the communication device to other communication networks;

any identifying communication networks covering the device's location and being accessible for the communication device;

any communication networks recommended according to communication costs;

any communication networks recommended according to a current load;

any communication networks recommended according to bandwidth properties;

any communication networks recommended according to a customer profile;

any hand over process for establishing a communication channel on a recommended communication network is started after the communication device is notified;

any identification of available networks triggered by a network control unit;

any network availability triggering;

any identification of available networks triggered periodically;

any detection of movement of a mobile communication device;

any identification of available networks triggered when a physical movement of the communication device is detected; or

the identification of available networks triggered by a capacity shortage on at least one of the networks;

The bits and pieces quoted from the various references fail to make these element obvious. Thus claim 1 is allowable over the combined references

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Request is made for the removal of the FINAL status, in as much as the Preliminary Amendment and the first office action basically crossed each other and applicant was not granted an opportunity to differentiate from the cited references prior to this reply.

It is anticipated that claim 1 is allowed. Please contact the undersigned for any questions.

Please charge any fee necessary to enter this paper to deposit account 50-0510.

Respectfully submitted,

By: _____/Louis Herzberg/_____

Dr. Louis P. Herzberg
Reg. No. 41,500
Voice Tel. (845) 352-3194
Fax. (845) 352-3194

3 Cloverdale Lane
Monsey, NY 10952

Customer Number: 54856